

Star Gazer News

Newsletter of the Delmarva Stargazers

www.delmarvastargazers.org

October 2005

Volume 12 Number 04

Presidential Comments

Lyle Jones

Hasn't September been great! The blue skies and dark skies have been magnificent. I hope that some of us got to use our telescopes. Don Surles said there was a chance for some auroras this past week (9/9 through 9/15) and of course the clouds came! Now, does this mean rain for our star party? We have just a week or so 'til the No-Frills and I think that all of us would appreciate some good skies to do some viewing!

Dave Groski emailed me about a guy (a retired computer science professor from Columbia University) that has tons of stuff in this garage. By stuff Dave meant lens and prism blanks and from my conversation with him, he also has some mirror blanks and optical flats. I have convinced him to come to our star party and do a talk at our meetings and perhaps at the No-Frills. So if, any one wants some glass be there on Saturday morning at our No-Frills.

I almost did not survive the first meeting as the new president! I forgot coffee and only thing that saved me was that I brought cookies. I did find the coffee and will be **ready** for the next meeting in October. Both Don Surles and Doug Miller did nice programs and as always Jerry Truitt did good job on the sky. For next month meeting Doug Miller will be back and talk about the software he used for the image processing his southern sky presentation. Greg Lee will do a shorten version of his presentation on the "Transit of Venus" and the calculation that can be done on the distance to the sun.

In closing, please remember the victims of Katrina. I hope that's survivors of Katrina are getting their lives back together! See you at the No-Frills and if not at the next Delmarva Star Gazers monthly meeting.



Upcoming Events:

- ⇒ Monthly meeting October 4th
- ⇒ Monthly field observing - Oct. 28th
- ⇒ NO FRILLS X Starparty (Sept.28-Oct. 2)

In This Edition:

Pj Riley

Capricornus :

At the September meeting, Don Surles presented the various mythologies for this constellation. A brief summary appears on page 2. For a more detailed report on the mythologies, please attend our monthly meetings where Don will continue this series of constellation methodology.

On page 4, I printed a sky chart for Capricornus, or the "Sea Goat", with lots of objects displayed. At the bottom of the page, I highlighted a few double stars and some Deep Sky Objects as a starting point for you to explore this constellation.

Mars :

Almost everyone has heard that Mars is going to be big this year. Some chain e-mails even said it would be as big as the moon! ("bright as", maybe, "big as", get real !)

Mars is going to be big, but not that big. Mars will peak at 20.2" at the end of October (actually Oct. 29-30). This is not quite as big as it got in August 2003, where it got to 25.1"

It won't get this big again until 2018! (in Dec. 2007 it'll be only 15.9").

Now when people talk about observing Mars, I immediately think of Bob Bunge of Bowie MD. Bob has been active in astronomy for decades. He has built several telescopes, of various size and portability. Bob is also a publish author, with articles in several astronomy magazines.

Bob is also know for drawing Mars. He has allowed me to put a few of his drawings, with descriptions, in our newsletter. When you get to page 5, stop and compare the 4 drawings to each other. Compare the dates of the drawings. Bob has recorded both of Mars and equipment.

Bob gave a talk about drawing Mars at a previous star party. I don't remember too many details, but I do remember Bob said you can't notice details on Mars with a short (5-10 sec.) look.

When you get a chance, look at Bob's website:
www.ladyandtramp.com

Capricornus – The Mythology

Don Surlles

Most of the Mediterranean and the early Chinese societies considered the double-V asterism of the constellation Capricornus as some sort of goat/fish-like person or person/animal. The common thread of identity was “goat-like”.

The classical Greek mythology associates Capricornus with the god Pan who was a grandson of Zeus. Pan was believed to have been born with goat-like horns and feet. He was considered to be the god of the goatherd and shepherd. His domain was the forests, thickets, ravines and mountain-tops...the places we consider to be “off the beaten path”.

Pan was always in pursuit of the beautiful woodland nymphs. And they always spurned him due to his ugly appearance. He was especially occupied with chasing a beautiful nymph named Syrinx and came very close to catching her one day. But to avoid being captured by the playful but ugly horned-headed, goat-footed Pan, she jumped into a river and asked to be saved from Pan. She was immediately turned into river reeds...the lesson here is “be careful of what you ask Mother River to do”!

Pan was heart-broken but he harvested the reeds and made a musical instrument he named a syrinx. He was a wonderful musician and played beautiful music on the syrinx and even competed with Apollo and his lyre to become the favorite musician of the Olympic gods.

During the revolt against the Olympic gods by the Titan Typhon the Olympic gods fled to Egypt to escape the wrath of Typhon. Most of the gods disguised themselves while Zeus did battle with Typhon. But poor Pan could not decide what his disguise should be and in a moment of “Pan-ick” he jumped into the Nile to escape Typhon. While in the river his behind goat-like feet were changed into a fishlike tail.

After the Typhon-Zeus conflict ended (with Zeus being the victor) Pan emerged from the river and Zeus was so amused by the site of his changed grandson that he immediately placed Pan’s form in the sky as Capricornus for all of the Olympic gods and man to enjoy forever.

How I spent my Summer

Pj Riley

It’s been a hot summer, so I went surfing....I found out Apogee came out with a line of binoculars with built-in nebula filters. The 20 x 80 model seemed like it was in my price range, so my financial advisor gave me a thumbs up. The first pair arrived in 5 days. Yes, I did say ‘first pair’. It turns out that the screw which attaches the eyepieces to the focuser is either stripped, or the wrong size. Adjustment of the focuser inward left the eyepieces ‘free’. The second pair are fine.

I went out during the bright starlight (daytime) and did some terrestrial viewing. I found out something quickly – these buggers are heavy (~7.5 pounds). I decided I needed something to support these binocs.

I put my wetsuit back on and did some more surfing....I found a website (http://www.astrotom.com/projects/binocular_mount.htm) that shows a parallelogram binocs tripod that looked like something I could build. I am **not** a master carpenter, but I do know which end of the screw goes in first! The only bad thing, it used a standard camera tripod for a base. I decided to use the design for the top half and to design my own base. I wanted it to be not only low tech, but ‘Lowes’ – tech.

During the Labor Day weekend, I went to Lowes and got the parts to construct the top half. I did have a slight brainstorm; I realized that if I stacked the parallel items and drilled through them all at the same time, the holes will be aligned. This ended a lot of double and triple measuring (I was wearing out my tape measure!). With the parts cut and drilled, I started assembly of the top half. All the parts fit, and it functions as it should. The original plans call for a special piece of hardware to mount the binocs to the tripod. Again I decided to go ‘Lowes’ tech. I rummaged around my surplus stash and decided on the mounting plate from an old tripod. This plate, mounted on the upright, should support the binos.

I came up with a design to make the tripod base that was the easiest I could figure, hope it holds up. Three solid legs attached to a piece of wood. A couple layers of Teflon I ‘found’ will give me ‘fluid’ motion as I turn this contraption. I added a wood disk with attached support to the base of the top half, with the parallelogram’s vertical support penetrating the disk. Counterweights, and a big lag screw goes through the center with ease, and now you have a ‘portable’ custom made binco tripod that only cost ~\$30-40 for parts. Now there are no special cuts, bevels, or edging done to this device, it is a function over form design. Stop by during the star party and take a look, and a look through....

How to Join the Delmarva Stargazers: Anyone with an interest in any aspect of astronomy is welcome

NAME _____

ADDRESS _____

CITY, STATE & ZIP _____

E-MAIL ADDRESS (If any) _____

Please attach a check for \$15 made payable to Delmarva Stargazers and mail to Kathy Sheldon, 20985 Fleatown Rd, Lincoln, DE 19960. Call club President Lyle Jones at 302-736-9842 for more information.

Helpful Hint #1

Cheap Dewshield for your Telrad®

Pj Riley

Don't throw out those empty Pringles® cans. Just take those cans and cut out the bottom. Now cut out part of the side for the diagonal on the Telrad®, then spray with flat black paint. You now have a 'disposable' cheap dewshield for your Telrad®, plus you got to snack on some chips ! I will have a few extra available for the no-frills star party (first come, first served).

Helpful Hint #2

Cheap Heater for your Eyepiece

Pj Riley

A long time ago, in early August, I was at the Mountain Institute in West Virginia during the Astronomy Camp. A young lady there was using hand warmers to keep her eyepieces dew free! The brand she was using was Hothands-2®.

These warmers are activated by opening the package and are only 1.5-2 inches high by 3 inches long.

A rubberband keeps them on the eyepiece, and they last for "up to **10 hours of heat**".

I found them at K-mart in packages of 6 for \$1.99. I will be testing them at No-Frills!

I will give you an update on their performance in a future newsletter.

Astronomy by Osmosis

Pj Riley

My wife, Doreen, does not actively stargaze on her own. She will look at objects I've centered in the eyepiece. She has not yet gone out to starhop on her own, but by hanging with me, she has picked up a bit of knowledge of the night sky.

The other morning, as Doreen and I went outside to carpool to work, Doreen looked up in the dark sky and asked "What's that by the moon, it looks reddish?" I told her that it was Mars. She replied that she didn't think it was a star, because she didn't remember any bright reddish stars in that area of the sky before.

Astronomy by Osmosis.



The dish at right is the one used by the kids at The Mountain Institute's Astronomy Camp while at the Greenbank National Radio Telescope site in West Virginia



The picture to the left was a 1 minute exposure with my digital camera at Stargaze 2004.

The objects in the dark are Joe Morris' camper, trailer, telescope, and ladder.

The sky glow is Anapolis.

Also, you can a red trail on the right from someone's flashlight.

Orion left a little star trails in the upper left.

Your 2005-2006 Officers

| Office | Officer | Phone | e-mail |
|----------------|---------------|--------------|-----------------------|
| President | Lyle Jone | 302-736-9842 | lyjones@state.de.us |
| Vice President | Jerry Truitt | 410-885-3327 | truittjs@netscape.com |
| Secretary | Pj Riley | 302-738-5366 | pjr127@yahoo.com |
| Treasurer | Kathy Sheldon | 302-422-4695 | kathy.sheldon@att.net |

Constellation of the month : Capricornis

Pj Riley

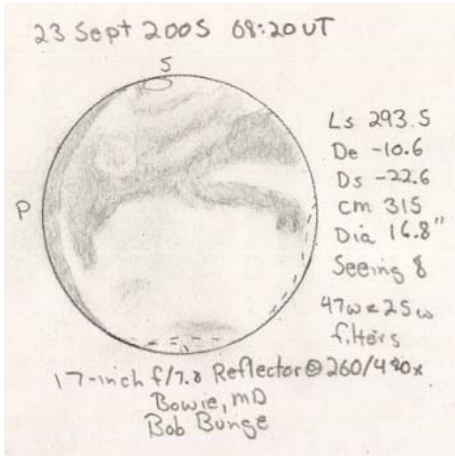


At the September meeting, Don presented the different mythologies of the constellation Capricornus (see page 2 of this issue). I thought I would list some of the interesting objects in the sky around Capricornus.

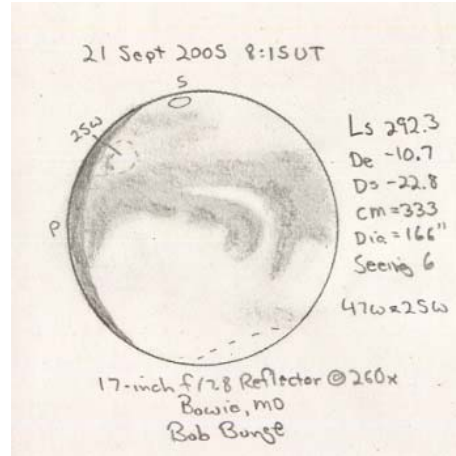
Some Double Stars: **Rho Capricorni** – Quadruple yellow and purplish stars – 4-6 inch scopes – 75x **Omicron Capricorni** – bluish white and blue stars – 4-6 inch scopes – 75x **Pi Capricorni** –triple star, close white and blue stars – 8-10 inch scopes – 200x

Deep Sky Objects: **NGC 6903** – faint halo with a bright core – 16-18 inch – 150x **NGC 6907** – bright halo with spiral arms - 16-18 inch – 150x **NGC 7099** – **M30** – globular cluster – at 8-10 inch scopes 100x, appears as a bright cluster with unresolved stars. At 16-18 inch 150x stars are resolved. And of course, **Neptune** !

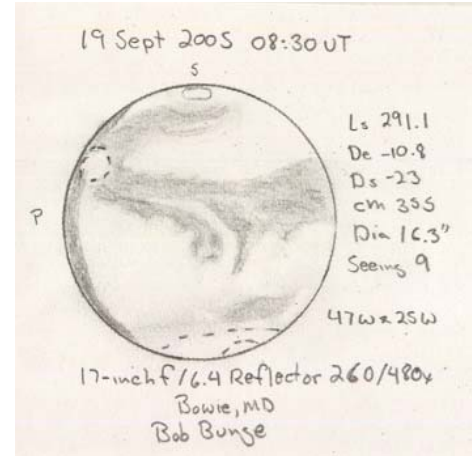
From (www.ladyandtramp.com): "One of Bob's favorite astronomical objects to observe is the planet Mars. Presented here are drawings of Mars that Bob is making during the 2005 opposition of Mars."



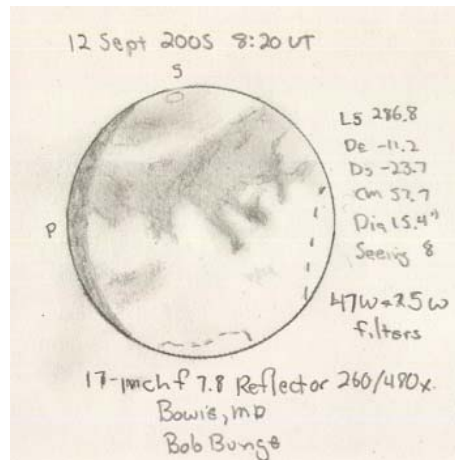
Seeing 8 out of 10. Warm, 70F. Thin high clouds, partial ring around the Moon during ob. The Mid-Atlantic US is now officially in a moderate drought condition. Certainly been good for Mars observing! With Syrtis Major coming into view, we have a classic view of Mars. The Hellas region showed detail too complex to draw, with bright banding in the northern parts, and darker details and east/west stripes in the southern section. At this CM, the North Polar Hood is still bright, but not as large. Western section of the NPH was brighter in both 47W filter (blue) and light light. Following limb had some hint of brightening and possible cloud activity.



Seeing 7 out of 10. Cool, 66F, quite clear, very bright Moon not far from Mars. Seeing wasn't the best, had to wait long periods for the moment finer detail. Bright area over Hellas was very bright in a 25W (red) filter. It was quite striking. North Polar Hood was also bright with a 47W filter.



Seeing 9 out of 10. Cool, 63F, quite clear, no clouds, slight hint of haze around an almost full Moon. Very bright, could almost draw without the aid of a flashlight. An extremely good view, very steady seeing, an amazing amount of detail on the surface. South polar cap was bright and very easy to see, even with the small size. More detail than I've seen this year in Sinus Meridani and Sabaeus. Hellas on the preceding (P) terminator appeared bright and even bulged a bit into the shadow. The North Polar Hood (NPH) was clearly white and very easy to see in white light. It was also complex with at least one area that appeared brighter in white and red light than the rest of the NPH.



Seeing 8 out of 10. Very cool (55F), heavy dew. No wind, pretty good transparency. Perhaps best view and most detailed drawing of the Solis Lacus region in 2005. Apparent North Polar Hood, seen in both 25W (red) and 47W (blue) filters. Following limb brightness best seen in white light and with the 47W filter.

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Sun and Moon Data for October 2005

Tuckahoe, MD
 38.98°N 75.93°W 5hrW
 Daylight Time Civil Twilight

| Date | Twilight | Rise | Sun Transit | Set | Twilight | Rise | Moon Transit | Set | % |
|------------|----------|-------|-------------|-------|----------|--------|--------------|--------|-----|
| 10/1/2005 | 6:33a | 7:00a | 12:53p | 6:46p | 7:13p | 5:06a | 11:43a | 6:10p | 3 |
| 10/2/2005 | 6:34a | 7:01a | 12:53p | 6:45p | 7:11p | 6:06a | 12:23p | 6:30p | 1 |
| 10/3/2005 | 6:35a | 7:02a | 12:53p | 6:43p | 7:10p | 7:08a | 1:04p | 6:51p | 0 |
| 10/4/2005 | 6:36a | 7:03a | 12:52p | 6:41p | 7:08p | 8:11a | 1:47p | 7:14p | 2 |
| 10/5/2005 | 6:37a | 7:04a | 12:52p | 6:40p | 7:06p | 9:16a | 2:32p | 7:40p | 5 |
| 10/6/2005 | 6:38a | 7:05a | 12:52p | 6:38p | 7:05p | 10:24a | 3:22p | 8:12p | 11 |
| 10/7/2005 | 6:39a | 7:06a | 12:51p | 6:37p | 7:03p | 11:35a | 4:15p | 8:51p | 18 |
| 10/8/2005 | 6:40a | 7:06a | 12:51p | 6:35p | 7:02p | 12:44p | 5:13p | 9:40p | 27 |
| 10/9/2005 | 6:41a | 7:07a | 12:51p | 6:34p | 7:00p | 1:49p | 6:14p | 10:40p | 37 |
| 10/10/2005 | 6:42a | 7:08a | 12:51p | 6:32p | 6:59p | 2:45p | 7:15p | 11:50p | 49 |
| 10/11/2005 | 6:43a | 7:09a | 12:50p | 6:31p | 6:58p | 3:32p | 8:15p | ***** | 60 |
| 10/12/2005 | 6:44a | 7:10a | 12:50p | 6:29p | 6:56p | 4:10p | 9:11p | 1:05a | 71 |
| 10/13/2005 | 6:45a | 7:11a | 12:50p | 6:28p | 6:55p | 4:42p | 10:05p | 2:22a | 81 |
| 10/14/2005 | 6:46a | 7:12a | 12:50p | 6:26p | 6:53p | 5:09p | 10:55p | 3:38a | 89 |
| 10/15/2005 | 6:46a | 7:13a | 12:49p | 6:25p | 6:52p | 5:35p | 11:44p | 4:52a | 95 |
| 10/16/2005 | 6:47a | 7:14a | 12:49p | 6:23p | 6:50p | 6:00p | ***** | 6:05a | 99 |
| 10/17/2005 | 6:48a | 7:15a | 12:49p | 6:22p | 6:49p | 6:26p | 12:32a | 7:18a | 100 |
| 10/18/2005 | 6:49a | 7:16a | 12:49p | 6:21p | 6:48p | 6:55p | 1:22a | 8:31a | 98 |
| 10/19/2005 | 6:50a | 7:17a | 12:49p | 6:19p | 6:46p | 7:29p | 2:13a | 9:43a | 94 |
| 10/20/2005 | 6:51a | 7:18a | 12:48p | 6:18p | 6:45p | 8:09p | 3:06a | 10:54a | 88 |
| 10/21/2005 | 6:52a | 7:20a | 12:48p | 6:17p | 6:44p | 8:56p | 4:01a | 11:59a | 81 |
| 10/22/2005 | 6:53a | 7:21a | 12:48p | 6:15p | 6:42p | 9:50p | 4:56a | 12:57p | 72 |
| 10/23/2005 | 6:54a | 7:22a | 12:48p | 6:14p | 6:41p | 10:49p | 5:50a | 1:47p | 63 |
| 10/24/2005 | 6:55a | 7:23a | 12:48p | 6:13p | 6:40p | 11:50p | 6:41a | 2:27p | 54 |
| 10/25/2005 | 6:56a | 7:24a | 12:48p | 6:11p | 6:39p | ***** | 7:30a | 3:00p | 44 |
| 10/26/2005 | 6:57a | 7:25a | 12:48p | 6:10p | 6:37p | 12:52a | 8:15a | 3:28p | 35 |
| 10/27/2005 | 6:58a | 7:26a | 12:48p | 6:09p | 6:36p | 1:54a | 8:58a | 3:52p | 26 |
| 10/28/2005 | 6:59a | 7:27a | 12:47p | 6:08p | 6:35p | 2:54a | 9:39a | 4:14p | 18 |
| 10/29/2005 | 7:00a | 7:28a | 12:47p | 6:06p | 6:34p | 3:54a | 10:19a | 4:34p | 11 |
| 10/30/2005 | 7:02a | 7:29a | 12:47p | 6:05p | 6:33p | 4:55a | 11:00a | 4:55p | 6 |
| 10/31/2005 | 7:03a | 7:30a | 12:47p | 6:04p | 6:32p | 5:58a | 11:42a | 5:17p | 2 |

The discovery in 1846 of the planet Neptune was a dramatic and spectacular achievement of mathematical astronomy. The very existence of this new member of the solar system, and its exact location, were demonstrated with pencil and paper; there was left to observers only the routine task of pointing their telescopes at the spot the mathematicians had marked.

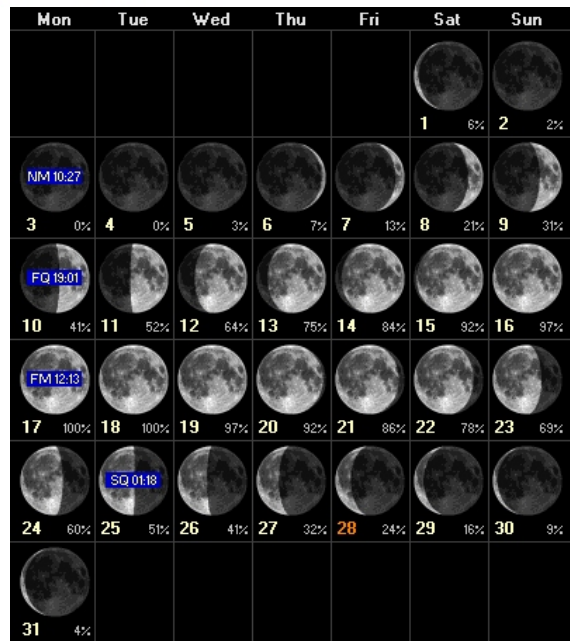
-James Newman

Most people today still believe, perhaps unconsciously, in the heliocentric universe every newspaper in the land has a section on astrology, yet few have anything at all on astronomy.

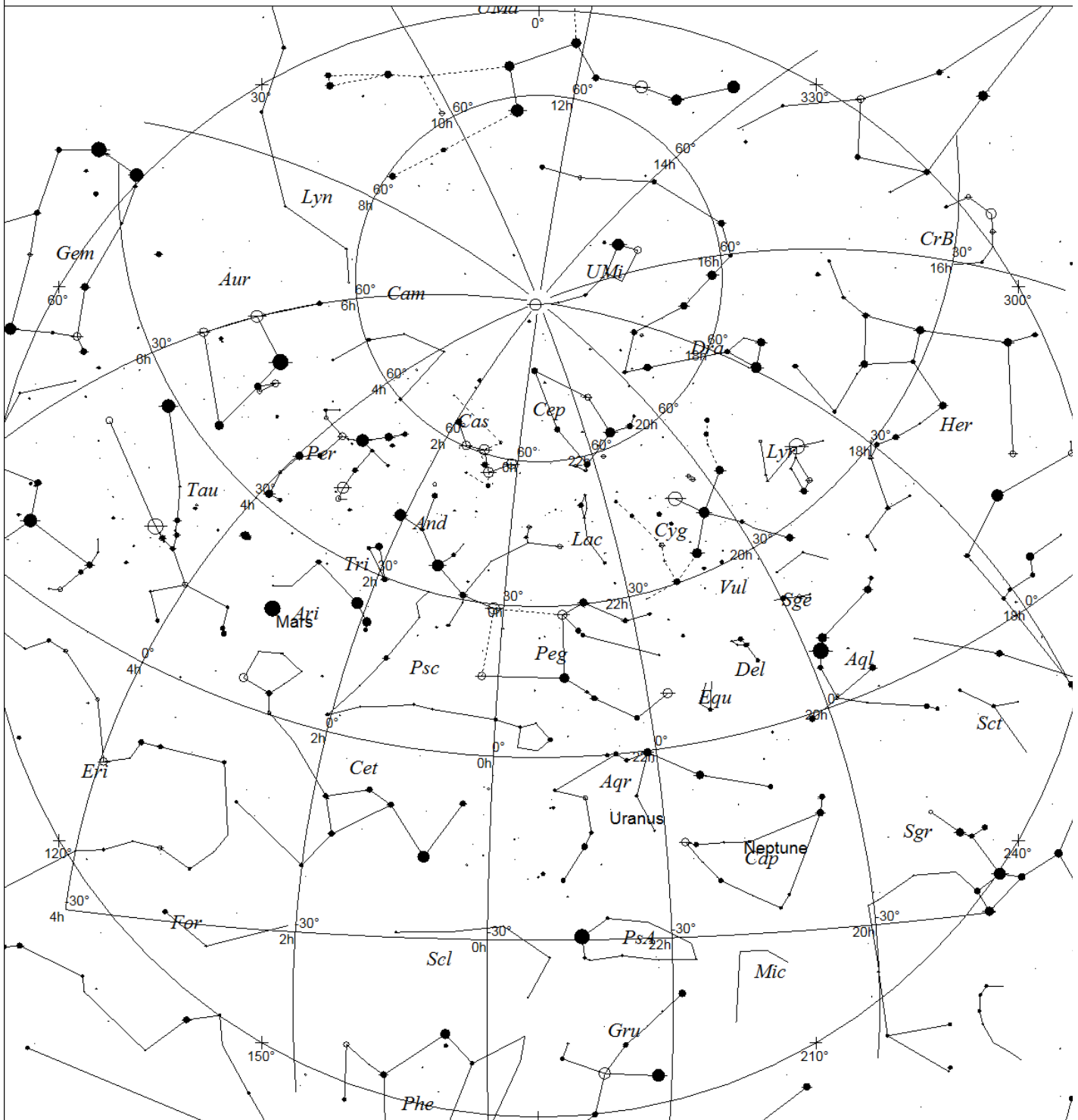
Hannes Alfvén

Telescopes are in some ways like time machines. They reveal galaxies so far away that their light has taken billions of years to reach us. We in astronomy have an advantage in studying the universe, in that we can actually see the past. We owe our existence to stars, because they make the atoms of which we are formed. So if you are romantic you can say we are literally starstuff. If you're less romantic you can say we're the nuclear waste from the fuel that makes stars shine. We've made so many advances in our understanding. A few centuries ago, the pioneer navigators learnt the size and shape of our Earth, and the layout of the continents. We are now just learning the dimensions and ingredients of our entire cosmos, and can at last make some sense of our cosmic habitat.

- Sir Martin Rees, Astronomer Royal of Great Britain



Skymap October 28 2005 10PM



| STARS | SYMBOLS | |
|---|--|---|
| <ul style="list-style-type: none"> ● <1 ● 1.5 ● 2 ● 2.5 ● 3 ● 3.5 ● 4 ● 4.5 ● >5 | <ul style="list-style-type: none"> ● Multiple star ○ Variable star ☄ Comet ☾ Galaxy □ Bright nebula | <ul style="list-style-type: none"> ☁ Dark nebula ⊕ Globular cluster ○ Open cluster ◇ Planetary nebula ⊞ Quasar △ Radio source × X-ray source ○ Other object |

Tuckahoe State Park, MD

Local Time: 22:00:00 28-Oct-2005
 Location: 38° 58' 0" N 75° 56' 0" W

UTC: 02:00:00 29-Oct-2005
 RA: 23h26m18s Dec: +38° 57' Field: 182.0°

Sidereal Time: 23:26:17
 Julian Day: 2453672.5833

Moondark for October: Shooting Southern Skies with a Digital Rebel

My most enjoyable nights under the sky have been spent without a telescope. Located as far south of the equator as we here are north of it, [New Zealand](#) has some of the cleanest air on the planet and is thinly populated. Outside the handful of big cities, the skies are inky black. The Southern Cross, Milky Way and the Magellanic Clouds show brightly overhead. If the weather would cooperate, I'd have an excellent shot at capturing astrophotographic souvenirs of these southern skies.

During the dark of the moon last January, [I was booked into accommodations where I expected](#) dark skies and spectacular views. I'd packed my Canon Digital Rebel (aka 300D), cable release and tripod, along with a star chart and red flashlight. The plan was to shoot several exposures in quick succession, limiting exposure length to prevent stars from trailing. While a quick check of the raw images looked promising, the plan was ultimately to align and composite individual frames to attain effectively a longer exposure.

For each part of the sky, about four to six images of 30 s each were taken. I used the 18-55 mm zoom lens supplied with the camera, wide open. The camera was set to ISO 1600 and the highest resolution (3072 x 2048) with JPEG compression. Images were aligned and combined with Christian Bul's [free-ware program Iris 4.37](#) using the coregister function and deep-sky registration menu options. Some images required a bit of trial and error to obtain the best results. Windowing the automatic registration region and down sampling the image both helped considerably.

The images at right are the result. If anything, I wish that I had taken more images to composite, but even then, there are so many stars that [identifying southern constellations](#)—what I did visually while not photographing them—is all but impossible. One image, taken as the southern Milky Way rose directly up almost like smoke from a hillside south of my observing spot, is by far my favorite because it best matches my recollection of those nights. I'll certainly go back—this time with a telescope.

Yahoo! groups are a great source of information on DSLR's in astrophotography: I've found the [Canon DSLR digital astro](#), [digital astro](#) and [Iris software](#) groups especially useful. Of course the same techniques work under our skies, and several members of the Delmarva Star Gazers are exploring the potential of DSLR's in astrophotography. Thanks especially to Tom Pomponio for advice and suggestions.

This is based on a presentation given at the club's September monthly meeting, and more information on wide-angle astrophotography can be found in [last month's issue](#). Moondark is written by [Doug Miller](#), published at the [Moondark web site](#), and printed in the [Delmarva Star Gazers' Star Gazer News](#). This document was last revised on 25 September 2005. Text and images copyright © 2005 by Douglas C. Miller, All Rights Reserved. This material may not be reproduced in any form without prior permission.



Upside down Orion and Saturn in Gemini on the horizon



The Coal Sack (dark nebula), Southern Cross and bright nebulosity of the Eta Carinae region of the Milky Way



The Large Magellanic Cloud, a companion galaxy of the Milky Way, in the constellation of Dorado



Centaurus, Crux and Carina rise above the landscape of the Coromandel Peninsula